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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,876	03/30/2001	Didier Wilhelm	2000FR303	6765

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17
EXAMINER

BERMAN, SUSAN W

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,876

Applicant(s)

WILHELM ET AL.

Examiner

Susan W Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003. (RCE)
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Response to Arguments

Applicant's arguments filed 06-16-2003 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to substitute ethoxylated trimethylolpropane diacrylate for tripropylene glycol diacrylate or include ethoxylated trimethylolpropane diacrylate with tripropylene glycol diacrylate in the compositions disclosed by Jacquinet et al is provided by the teachings of Swofford in analogous art. Swofford teaches that each of tripropylene glycol diacrylate and ethoxylated trimethylolpropane diacrylate are suitable multifunctional acrylate monomers in coating compositions containing silica treated with a vinylsilane and that the ethoxylated monomer is a preferred monomer to employ in the disclosed compositions.

Applicant argues that one of ordinary skill in the art at the time of the invention would not assume that the multifunctional acrylate that works in the system containing up to 35 wt. % volatile organic solvent, as taught by Swofford, would work in the solvent system disclosed by Jacquinet et al. This argument is not found persuasive for the following reasons. Jacquinet et al teach compositions comprising substantial amounts of isopropanol, the same lower alkanol solvent that Swofford employs in the examples. Swofford uses lower amounts of alkanol solvent than Jacquinet et al. Since each of Jacquinet et al and Swofford teach compositions comprising a multifunctional acrylate and an alkanol solvent (such as isopropanol), applicant's argument that the multifunctional acrylate taught by Swofford would not be expected to work in the solvent system taught by Jacquinet et al is not found persuasive.

It is agreed, as Applicant argues, that Jacquinet et al teach that the alcohol is eliminated through azeotropic distillation under low pressure leaving a solution of silica, vinyltrialkoxysilane, tripropylene glycol triacrylate containing less than 1% water (see Example 1). Swofford does not mention the residual wt. % water in the volatile solvent or wt % solvent in the disclosed compositions. Example I of Swofford discloses heating a mixture of vinyltrimethoxysilane and Nalco colloidal silica, then adding a triacrylate, isopropanol and a photoinitiator. The composition is coated onto a substrate and the heated to evaporate the solvent before irradiation. Swofford teaches that the solvent should be substantially removed from the surface of the coated film prior to curing the composition (column 8, lines 30-39). A low residual water content would be expected after hydrolysis of the trimethoxysilane and colloidal silica to form a silica/vinyltrimethoxysilane condensate. The composition is additionally dried at 75 °C and then irradiated to crosslink (column 9, lines 18-26).

Applicant argues that Swofford does mention the residual wt. % water in the disclosed composition and points to column 7, lines 14-19. In column 7, lines 14-19, Swofford teaches that up to 35 weight percent lower aliphatic alkanol, based on the total weight of the aqueous dispersion, may optionally be added to enhance the stability of the silica/partial condensate dispersion. There is no statement regarding the wt. % water present in the Nalco colloidal silica in the aqueous dispersion after condensation. Swofford is discussing the dispersion before solvent is removed in column 7, lines 13-19. Applicant provides literature to show that Nalco 1034A used in Example 1 of Swofford contains 66% water or other liquid medium. It is noted that the silica sol employed in Example 1 of Jacquinet et al contains 70 % water. The difference appears to be that Swofford teaches removing solvent before curing (column 8, lines 30-39, and the examples), while Jacquinet et al teach removing solvent after mixing the components of the compositions to provide a composition that is storage stable. However, this difference does not negate the teaching of Swofford that ethoxylated (meth)acrylates are preferred (meth)acrylate monomers in silicoacrylic compositions. In any case, Jacquinet et al is relied upon for teaching a very low

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residual water and solvent content in the disclosed compositions. Swofford is relied upon for teaching that ethoxylated TMPTA is a preferred multifunctional acrylate in compositions comprising the same components, i.e. silica, vinyltrialkoxo silane and multifunctional acrylate monomer as the compositions taught by Jacquinot et al. There is no evidence of record to obviate the obviousness of the instantly claimed compositions by showing that unexpected results are obtained wherein an ethoxylated (meth)acrylate monomer is substituted for a non-ethoxylated (meth)acrylate monomer in the compositions disclosed by Jacquinot et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacquinot et al (JP 11-246789, FR 2772777 or EP 0 926 170 A1) in view of Swofford (4,822,828). Jacquinot et al disclose and claim silico-acrylic fluid compositions comprising silica, vinylsilane and tripropylene glycol diacrylate as multifunctional acrylic monomer. The compositions contain less than 1.5%, preferably 1.2% water. The limitations set forth in the instant dependent claims are taught by Jacquinot et al.

Swofford discloses radiation curable coating compositions comprising a partial condensate of colloidal silica and a vinyl silane, a multifunctional acrylate and a photoinitiator. The multifunctional acrylates taught include tripropylene glycol diacrylate and ethoxylated trimethylolpropane triacrylate, which is a preferred monomer (column 6, lines 52-68). Swofford teaches that monomers that do not create stability or viscosity problems are selected, that triacrylates are preferred and that water-soluble

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triacylates, such as ethoxylated TMPTA, are more preferred due to lower initial haze (column 6, lines 43-51).

It would have been obvious to one skilled in the art to substitute ethoxylated trimethylolpropane diacrylate for tripropylene glycol diacrylate or include ethoxylated trimethylolpropane diacrylate with tripropylene glycol diacrylate in the compositions disclosed by Jacquinet et al, as taught by Swofford in analogous art. Jacquinet et al provide motivation by teaching that the disclosed compositions comprise tripropylene glycol diacrylate as multifunctional acrylic monomer and that TPGDA is miscible with organic solvents, allowing dilution of the composition with TPGDA to reduce the silica concentration when desired. One of ordinary skill in the art at the time of the invention would have been motivated to do so because Swofford teaches that each of tripropylene glycol diacrylate and ethoxylated trimethylolpropane diacrylate are suitable multifunctional acrylate monomers in coating compositions containing silica treated with a vinylsilane. Swofford provides additional motivation to include the ethoxylated monomer by teaching that it is a preferred monomer in the disclosed compositions.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of US Patent No. 6,136,912 in view of Swofford

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(4,822,828). US '912 claims silicoacrylic compositions corresponding to those instantly claimed except that the multifunctional monomer is tripropylene glycol diacrylate instead of an alkoxyated (meth)acrylate. Swofford discloses analogous radiation curable coating compositions comprising a partial condensate of colloidal silica and a vinyl silane, a multifunctional acrylate and a photoinitiator. The multifunctional acrylates taught include tripropylene glycol diacrylate and ethoxylated trimethylolpropane triacrylate, which is a preferred monomer (column 6, lines 52-68). Swofford teaches that monomers that do not create stability or viscosity problems are selected, that triacrylates are preferred and that water-soluble triacrylates, such as ethoxylated TMPTA, are more preferred due to lower initial haze (column 6, lines 43-68).

It would have been obvious to one skilled in the art to substitute ethoxylated trimethylolpropane diacrylate for tripropylene glycol diacrylate or include ethoxylated trimethylolpropane diacrylate with tripropylene glycol diacrylate in the compositions claimed in US '912, as taught by Swofford in analogous art. The reason is that ethoxylated trimethylolpropane diacrylate differs from TPGDA only in that it is ethoxylated and would be expected by one skilled in the art to provide a multifunctional acrylate monomer equivalent in function (polymerizable and miscible with organic solvents) to TPGDA in the disclosed compositions. One of ordinary skill in the art at the time of the invention would have been motivated to do so because Swofford teaches that each of tripropylene glycol diacrylate and ethoxylated trimethylolpropane diacrylate are suitable multifunctional acrylate monomers in coating compositions containing silica treated with a vinylsilane. Swofford provides additional motivation by teaching that monomers that do not create stability or viscosity problems are selected, that triacrylates are preferred and that water-soluble triacrylates, such as ethoxylated TMPTA, are more preferred due to lower initial haze, thus providing motivation to select ethoxylated TMPTA from the (meth)acrylate monomers disclosed (column 6, lines 43-68).

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Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06-16-2003 has been entered.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 703 308 0040. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703 308 2462.

The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.



Susan W Berman
Primary Examiner
Art Unit 1711

SB
August 12, 2003